

## What is Your Diagnosis?

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### *Signalment*

A nine kilogram, 2 year-old, male, Shih Tzu dog.

### *History*

The patient was showed up to the diagnostic imaging unit, The Small Animal Teaching Hospital, Faculty of Veterinary Science, Chulalongkorn University due to the chief complains of left forelimb swelling after the dog was hit by car for one day duration.

### *Clinical examination*

General physical conditions of the dog include dehydration status, color of mucous membrane, heart rate and sound, respiratory rate and sound, abdominal status, femoral pulse, and body temperature were in normal limit but left forelimb was swollen at elbow joint with crepitus sound and non-weight bearing.

### *Radiographic examination*

Due to the orthopedic clinical signs, the patient was subjected for orthopedic and thoracic radiography to evaluate the abnormalities of left forelimb and thoracic cavity.

What is your diagnosis?  
Please turn to next page for the answer.

### **Radiographic findings**

Thoracic radiograph, both of right lateral and ventrodorsal projections, showed normal appearance of thoracic cavity including heart, lung, pulmonary vasculature, thoracic vertebrae and rib. However, the left forelimb revealed transverse fracture of proximal

third of left ulna with cranial dislocation of the radial head concurrence with adjacent soft tissue swelling that more distinctively on the lateral projection (Figure. 1) than that of the anteroposterior projection (Figure 2).



**Figure 1** The lateral projection of the left elbow showed that the radial head was cranially dislocated from the humeroradial joint (arrow head). In addition, there was evidence of the oblique fracture of the proximal third ulna (arrow).



**Figure 2** The anteroposterior projection of the elbow joint, the incongruity of the humeroradial joint was detected (arrow head). Besides, the superimposition of the fracture line at the ulna was seen (arrow).

### **Radiographic diagnosis**

*Monteggia fracture (type I)*

### **Discussion**

Monteggia fractures are defined as the luxation of the radius with concurrent fracture of the ulna (Driessen, 2017 and Leclerc et al., 2014). The first report of Monteggia fractures was unveiled in the 19th century (Leclerc et al., 2014). In companion animals such as dogs and cats, Monteggia fractures are barely happened because the force has directly performed on the caudal part of the ulna while weight bearing of the forelimb (Driessen, 2017). The etiologies of Monteggia fracture in domestic carnivores were reported that 78% of the Monteggia fractures were caused by road traffic accidents and falls following by 12 % from bite and 6% from firearms, respectively (Blieux, 2005). In veterinary orthopedics, Monteggia fractures are divided into four classifications, however, due to the dislocation to the

cranial part of the radial head with fracture of ulna in this dog, type I of Monteggia fracture was classified.

### **Reference**

- Blieux, V 2005. Des fractures de Monteggia chez le chien et le chat: études anatomique, clinique, et rétrospective de 59 cas de fractures de l'ulna avec luxation de la tête radiale. Thèse vétérinaire de Lyon. 169 pages.
- Driessen, F 2017. Monteggia fracture in dog. Vet times. 1-5.
- Leclerc A, Greunz EM, Daude-Lagrave, A 2014. Surgical treatment of a type II Monteggia fracture in a ring-tailed lemur (*Lemur catta*). Revue Méd Vét. 165: 313-317.